Amendments to the Claims

Listing of claims:

1. (Currently Amended) A composite of a vulcanizable ~~rubber or rubber-type~~ composition selected from a group consisting of natural rubbers, synthetic rubbers and thermoplastic elastomers and having at least one metal reinforcement element embedded therein, wherein ~~said~~ the metal reinforcement ~~elements have~~ element has a coating of a polymer deposited from a solution and ~~are~~ compatible with and co-polymerizable with said vulcanizable ~~rubber~~ composition, and bearing functional groups covalently bonding to the metal surface of said reinforcement element, wherein the functional groups are selected from the group consisting of:

thiol groups, mercapto groups, silanes, amines,

-SH; -$SiHCl_2$; -SiH_2Cl; -$Si(Cl)_3$; -$SiHBr_2$; -SiH_2Br; -$SiBr_3$; -$Si(R'(Cl)_2)$; -$Si(OR')_3$; -$Si(R'(OR')_2)$;

-PO_3H_2, -SO_2H,

acid anhydrides of -SH; -$SiHCl_2$; -SiH_2Cl; -$Si(Cl)_3$; -$SiHBr_2$; -SiH_2Br; -$SiBr_3$; -$Si(R'(Cl)_2)$; -$Si(OR')_3$; -$Si(R'(OR')_2)$;

-PO_3H_2, -SO_2H,

acid chloride groups of -SH; -$SiHCl_2$; -SiH_2Cl; -$Si(Cl)_3$; -$SiHBr_2$; -SiH_2Br; -$SiBr_3$; -$Si(R'(Cl)_2)$; -$Si(OR')_3$; -$Si(R'(OR')_2)$;

-PO_3H_2, -SO_2H,

organometallic groups of the formula -$M(OR')_n$, whereby M is a metal selected from the group consisting of Al, Sn, B, Ti and V; and n is the ligand number corresponding to the metal M; and

a phthalocyanin, phthalonitril groups, a monothiol, or monothiolate groups;

and R' is an alkyl selected from the group consisting of methyl, ethyl or propyl.

2. (Original) A composite according to claim 1, wherein said solution is an aqueous solution.

3. (Original) A composite according to claim 1, wherein said solution is an alcoholic solution.

4. (Original) A composite according to claim 1, wherein said solution is an organic solution.

5. (Original) A composite according to claim 1, wherein said metal reinforcement elements have a coating of a non-cured rubber composition.

6. (Canceled)

7. (Canceled)

8. (Canceled)

9. (Currently Amended) A composite according to claim 1, wherein said metal reinforcement elements comprise on top of said coating, a layer of a skim composition for the vulcanizable ~~rubber or rubber-like~~ composition.

10. (Currently Amended) A composite according to claim 1 wherein the vulcanizable ~~rubber~~ composition to be reinforced is a composition selected from the group consisting of a synthetic poly(isoprene), a natural poly(isoprene), a synthetic poly(butadiene), natural poly(butadiene), a styrene-butadiene-rubber (SBR), a halobutylrubber, ~~or~~ and an ethylene-propylene-diene-rubber (EPDM).

11. (Original) A composite according to claim 1, wherein said metal reinforcement element is an elongated steel element.

12. (Original) A composite according to claim 11, wherein said elongated steel element is coated with at least one metallic layer.

13. (Currently Amended) A composite according to claim 12, wherein said metallic layer is comprised of a metal selected from the group consisting of brass, bronze, zinc, zinc alloy, tin ~~or~~ and tin alloy.

14. (Currently Amended) A composite according to claim 13, wherein said zinc alloy is an alloy selected from the group consisting of a zinc-aluminium alloy, a zinc-aluminium-mischmetal alloy, a zinc-manganese alloy, a zinc-cobalt alloy, a zinc-nickel alloy, a zinc-iron alloy ~~or~~ and a zinc-tin alloy.

15. (Canceled)

16. (Canceled)

17. (Canceled)

18. (Currently Amended) A composite according to claim ~~17~~ 1, wherein said functional groups are carried along a polymer backbone.

19. (Currently Amended) A composite according to claim ~~17~~ 1, wherein said functional groups are part of side chains of the polymer.

20. (Original) A composite according to claim 18, wherein said functional groups are epoxy groups carried along the polymer backbone.

21. (Original) A composite according to claim 18, wherein said functional groups are epoxy groups which are part of side chains attached to the polymer backbone.

22. (Currently Amended) A composite according to claim ~~16~~ 1, wherein said organometallic groups are of the formula $-M(Cl)_n$, where $_n$ is the ligand number corresponding to the metal M.

23. (Canceled)

24. (Currently Amended) A composite according to claim 1, wherein said polymer is bound to said metal surface by an adhesion promoter that is a bifunctional compound of the general formula (I)

$$X\text{-}(R)n\text{-}(Ar)l\text{-}(R)m\text{-}Y \quad (I)$$

with ~~*~~ X representing a group capable of reacting covalently at the metal surface,

R representing an organic spacer chain,

Ar representing an aromatic system,

Y representing a group capable of forming covalent bonds to the functional groups of said coating, and $0 \leq n, m \leq 16$; and $0 \leq l \leq 6$.

25. (Currently Amended) A composite according to claim 24, wherein ~~A~~ Ar represents a heteroaromatic system.

26. (Currently Amended) A composite according to claim 24 wherein

X is a functional group selected from the group consisting of-SH; -$SiHCl_2$; -SiH_2Cl; -$Si(Cl)_3$; -$SiHBr_2$; -SiH_2Br; -$SiBr_3$; -$Si(R'(Cl)_2)$; -$Si(OR')_3$; -$Si(R'(OR')_2)$; -COOH; -COCl; -PO_3H_2, -SO_2H; an organometallic group of the formula -$M(OR')_n$, whereby M is a metal selected from the group consisting of Al, Sn, B, Ti and V and n is the ligand number corresponding to the metal M; a phthalocyanin; a phthalonitril group; a monothiol; ~~or~~ and a monothiolate group; R' being an alkyl;

~~R' is an alkyl~~

Y is a functional group selected from the group consisting of NH_2; NHR'; NR'_2; an unsaturated residue; an acrylic acid group; a methycrylic acid group; methyl esters or ethyl esters; and

~~-CN is a functional group selected from the group consisting of an activated carboxylic ester; an aldehyde group; an epoxide group; -SH; -$SiHCl_2$; -SiH_2Cl; -$Si(Cl)_3$; -$SiHBr_2$; -SiH_2Br; -$SiBr_3$; -$Si(R'(Cl)_2)$; -$Si(OR')_3$; -$Si(R'(OR')_2)$; -COOH; -COCl; or a functional group capable of forming a complex with at least one ingredient of a non-metallic medium;~~

R represents -CH_2-~~; and~~

~~AR represents an aromatic system~~.

27. (Currently Amended) A composite according to claim 26, wherein ~~AR~~ Ar represents a heteroaromatic system.

28. (Currently Amended) A composite according to claim 26, wherein R represents a -(CH_2)- chain; $2 \leq n \leq 20$; and said chain ~~may be~~ is unhalogenated, ~~may contain~~ contains aromatic units, and ~~may comprise~~ includes constituents selected from the group consisting of: -$(CH_2)_iCH_3$ where $0 \leq i \leq 5$, -$O(CH_2)_jCH_3$, or -$O(CF_2)_iCH_3$ where $0 \leq j \leq 4$, -CN and -NH_2; -CF_2-; -CH_2-CO-NH-CH_2-; -CF_2-CO-NH-CF_2-; -CH_2-CO-NH-CF_2-; and CF_2-CO-NH-CH_2-; and where ~~where $0 \leq n$ and $m \leq 16$.~~

-CN is a functional group selected from the group consisting of an activated carboxylic ester; an aldehyde group; an epoxide group;-SH; -$SiHCl_2$; -SiH_2Cl; -$Si(Cl)_3$; -$SiHBr_2$; -SiH_2Br; -$SiBr_3$; -Si(R'$(Cl)_2$); -Si$(OR')_3$; -Si(R'$(OR')_2$); -COOH; -COCl; or a functional group capable of forming a complex with at least one ingredient of a non-metallic medium.

29. (Original) A composite according to claim 28, wherein said chain may be partially halogenated.

30. (Original) A composite according to claim 28, wherein said chain may be perhalogenated.

31. (Original) A composite according to claim 28, wherein said chain may contain thiophen units.

32. (Original) A composite according to claim 28, wherein said aromatic units may comprise constituents selected from the group consisting of: -$(CH_2)_iCH_3$ where $0 \leq i \leq 5$, -$O(CH_2)_jCH_3$, or -$O(CF_2)_iCH_3$ where $0 \leq j \leq 4$, -CN and -NH_2; -CF_2-; -CH_2-CO-NH-CH_2-; -CF_2-CO-NH-CF_2-; -CH_2-CO-NH-CF_2-; and CF_2-CO-NH-CH_2- ~~where $0 \leq n$ and $m \leq 16$~~.

33. (Original) A composite according to claim 31, wherein said thiophen units ~~may~~ comprise constituents selected from the group consisting of: $-(CH_2)_iCH_3$ where $0 \leq i \leq 5$, $-O(CH_2)_jCH_3$, ~~or~~ $-O(CF_2)_iCH_3$ where $0 \leq j \leq 4$, $-CN_2$ ~~and~~ $-NH_2$; $-CF_2-$; $-CH_2-CO-NH-CH_2-$; $-CF_2-CO-NH-CF_2-$; $-CH_2-CO-NH-CF_2-$; and $CF_2-CO-NH-CH_2-$ ~~where $0 \leq n$ and $m \leq 16$~~.

34. (Currently Amended) A composite according to claim 26, wherein X is a functional group selected from the group consisting of the acid anhydride group of -SH; $-SiHCl_2$; $-SiH_2Cl$; $-Si(Cl)_3$; $-SiHBr_2$; $-SiH_2Br$; $-SiBr_3$; $-Si(R'(Cl)_2)$; $-Si(OR')_3$; $-Si(R'(OR')_2)$; -COOH; -COCl; $-PO_3H_2$, ~~or~~ and $-SO_2H$.

35. (Currently Amended) A composite according to claim 26, wherein X is a functional group selected from the group consisting of the acid chloride group of -SH; $-SiHCl_2$; $-SiH_2Cl$; $-Si(Cl)_3$; $-SiHBr_2$; $-SiH_2Br$; $-SiBr_3$; $-Si(R'(Cl)_2)$; $-Si(OR')_3$; $-Si(R'(OR')_2)$; -COOH; -COCl; $-PO_3H_2$, ~~or~~ and $-SO_2H$.

36. (Currently Amended) A composite according to claim 26, wherein R' is an alkyl selected from the group consisting of methyl, ethyl ~~or~~ and propyl.

37. (Canceled)

38. (Currently Amended) A cured ~~rubber or rubber-like~~ composition obtained by vulcanization of a composite according to claim 1.

39. (Original) A composition according to claim 38, wherein said composition is a pneumatic tire.

40. (Original) A composition according to claim 38, wherein said composition is a hose.

41. (Original) A composition according to claim 38, wherein said composition is a conveyor belt.

42. (Original) A composition according to claim 38, wherein said composition is a pulley belt.